

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

IN THE CLAIMS

Please amend claims 1, 3, 7, 9 and 11 as indicated below.

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently Amended): A mirror device for a vehicle comprising:

a first gear which is rotatable; [and]

a second rotatable gear, and

a tiltable coupling connecting the first gear and the second gear so that the axis of rotation of one of said gears is tiltable with respect to the other, such that a tilt force applied to one gear is not transmitted to the other when the first gear is being rotated, wherein the second gear is rotated integrally with the first gear, and a mirror for a vehicle is thereby rotated.

2. (Original): The mirror device for a vehicle of claim 1, further comprising at least one of:

first bearings supporting a rotating central shaft of the first gear at both sides of the first gear; and

second bearings supporting a rotating central shaft of the second gear at both sides of the second gear.

3. (Currently Amended): The mirror device for a vehicle of claim 1, said coupling includes a connecting hole [is] formed at a rotating central shaft of one of the first gear and the second gear, and a connecting shaft [is] provided at a rotating central shaft of the

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

other of the first gear and the second gear, and the first gear and the second gear ~~are~~ connected together via the connecting hole and the connecting shaft.

4. (Original): The mirror device for a vehicle of claim 3, wherein the connecting hole and the connecting shaft are structured such that the connecting shaft is able to tilt within the connecting hole when the connecting hole and the connecting shaft are engaged.

5. (Original): The mirror device for a vehicle of claim 4, wherein the connecting hole is shaped as a substantially oval column which has a pair of curved side surfaces which oppose one another, and at which oval column a diameter between other opposing side surfaces, in a cross-section orthogonal to a longitudinal direction, gradually decreases toward a longitudinal direction central portion, and the connecting shaft is shaped as a substantially rectangular column.

6. (Original): The mirror device for a vehicle of claim 4, wherein the connecting hole is shaped as a substantially oval column having a pair of opposing flat side surfaces, and the connecting shaft is shaped as a substantially rectangular column.

7. (Currently Amended): The mirror device for a vehicle of claim 1, further comprising a worm gear which is provided at an output shaft of a motor and which is rotated due to the motor being driven, [and] wherein the first gear engages with the worm gear and

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

the axis of rotation of the worm gear is tilttable with respect to the axis of rotation of the first gear.

8. (Original): The mirror device for a vehicle of claim 1, further comprising a helical gear which is connected to a vehicle body and which engages with the second gear, and as the second gear rotates, the second gear is rotated around the helical gear and the mirror is thereby rotated.

9. (Currently Amended): A mirror device for a vehicle comprising:
a first worm gear which is provided at an output shaft of a motor and which is rotated due to the motor being driven;
a first helical gear which is rotatable and engages with the first worm gear;
~~a second worm rotatable gear, a tilttable coupling connecting the second worm gear which is tiltably connected to the first helical gear so that the axis of rotation of said second worm gear is tilttable with respect to the axis of rotation of said first helical gear when said second worm gear, and which is rotated integrally with the first helical gear due to the first helical gear being rotated; and~~
a helical gear which is connected to a vehicle body and which engages with the second worm gear, and as the second worm gear rotates, the second worm gear is rotated around the helical gear and a mirror is thereby rotated.

10. (Original): The mirror device for a vehicle of claim 9, further comprising at least one of:

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

first bearings supporting a rotating central shaft of the first helical gear at both sides of the first helical gear; and

second bearings supporting a rotating central shaft of the second worm gear at both sides of the second worm gear.

11. (Currently Amended): The mirror device for a vehicle of claim 9, wherein said coupling includes a connecting hole [is] formed at a rotating central shaft of one of the first helical gear and the second worm gear, and a connecting shaft [is] provided at a rotating central shaft of the other of the first helical gear and the second worm gear, and the first helical gear and the second worm gear are connected together via the connecting hole and the connecting shaft.

12. (Original): The mirror device for a vehicle of claim 11, wherein the connecting hole and the connecting shaft are structured such that the connecting shaft is able to tilt within the connecting hole when the connecting hole and the connecting shaft are engaged.

13. (Original): The mirror device for a vehicle of claim 12, wherein the connecting hole is shaped as a substantially oval column which has a pair of curved side surfaces which oppose one another, and at which oval column a diameter between other opposing side surfaces, in a cross-section orthogonal to a longitudinal direction, gradually decreases toward a longitudinal direction central portion, and the connecting shaft is shaped as a substantially rectangular column.

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

14. (Original): The mirror device for a vehicle of claim 12, wherein the connecting hole is shaped as a substantially oval column having a pair of opposing flat side surfaces, and the connecting shaft is shaped as a substantially rectangular column.

15. (Currently Amended): A retracting mechanism of an outer mirror device for a vehicle, comprising:

a connecting member connected to an outer mirror for a vehicle;
a first worm gear which is provided at an output shaft of a motor provided at the connecting member, and which is rotated due to the motor being driven;
a first helical gear which is provided at the connecting member, and which is engaged with the first worm gear, and which is rotated due to the first worm gear being rotated;
a second rotatable worm gear which is provided at the connecting member,;
~~a tiltable coupling connecting the second worm gear to and which is tiltably connected to the first helical gear so that the axes of rotation of said second worm gear and said first helical gear are mutually tiltable to one another when said second worm gear, and which is rotated integrally with the first helical gear due to the first helical gear being rotated; and~~
a second helical gear which is connected to a vehicle body and which is engaged with the second worm gear, and due to the second worm gear being rotated, the second worm gear is rotated around the second helical gear and the outer mirror is thereby rotated together with the connecting member.

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

16. (Original): The retracting mechanism of an outer mirror device for a vehicle of claim 15, further comprising at least one of:

first bearings supporting a rotating central shaft of the first helical gear at both sides of the first helical gear; and

second bearings supporting a rotating central shaft of the second worm gear at both sides of the second worm gear.

17. (Currently Amended): The retracting mechanism of an outer mirror device for a vehicle of claim 15, wherein said coupling includes a connecting hole is formed at a rotating central shaft of one of the first helical gear and the second worm gear, and a connecting shaft is provided at a rotating central shaft of the other of the first helical gear and the second worm gear, and the first helical gear and the second worm gear are connected together via the connecting hole and the connecting shaft.

18. (Original): The retracting mechanism of an outer mirror device for a vehicle of claim 17, wherein the connecting hole and the connecting shaft are structured such that the connecting shaft is able to tilt within the connecting hole when the connecting hole and the connecting shaft are engaged.

19. (Original): The retracting mechanism of an outer mirror device for a vehicle of claim 18, wherein the connecting hole is shaped as a substantially oval column which has a pair of curved side surfaces which oval column oppose one another, and at which a diameter between other opposing side surfaces, in a cross-section orthogonal to a longitudinal

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

direction, gradually decreases toward a longitudinal direction central portion, and the connecting shaft is shaped as a substantially rectangular column.

20. (Original): The retracting mechanism of an outer mirror device for a vehicle of claim 18, wherein the connecting hole is shaped as a substantially oval column having a pair of opposing flat side surfaces, and the connecting shaft is shaped as a substantially rectangular column.